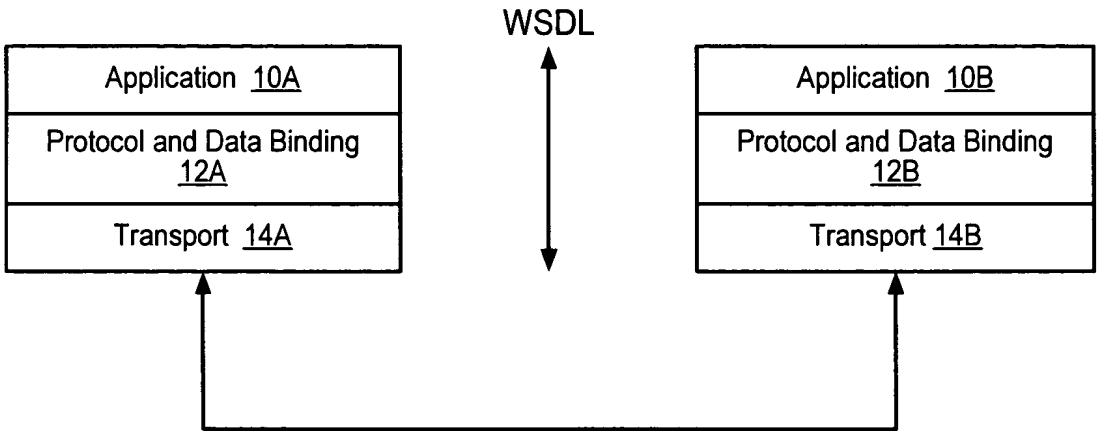

Fig. 1
Prior Art

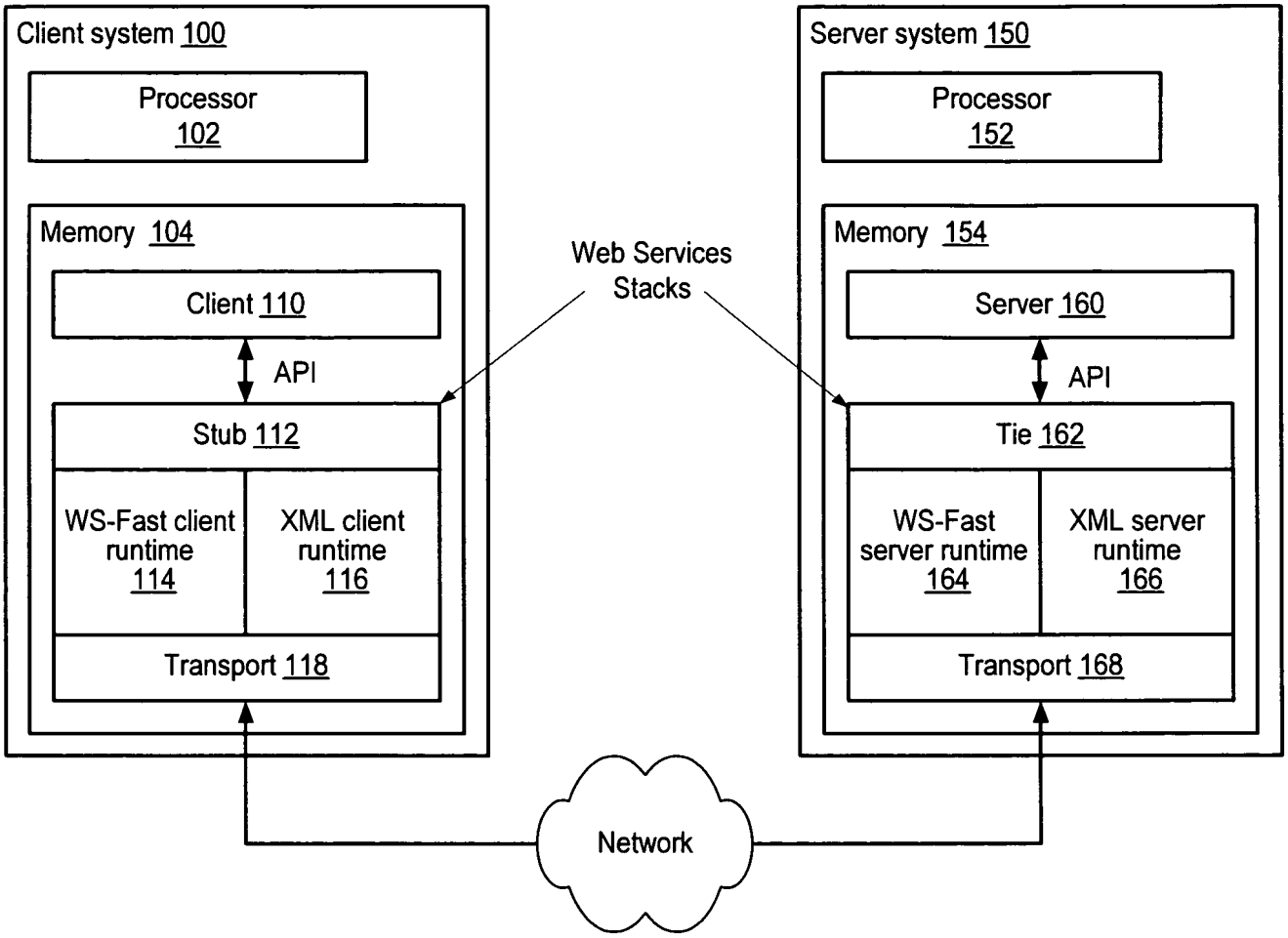
Client system 100
Processor 102
Memory 104
Client 110
API
Stub 112
WS-Fast client runtime 114
XML client runtime 116
Transport 118
Web Services Stacks
Server system 150
Processor 152
Memory 154
Server 160
API
Tie 162
WS-Fast server runtime 164
XML server runtime 166
Transport 168
Network

Fig. 2

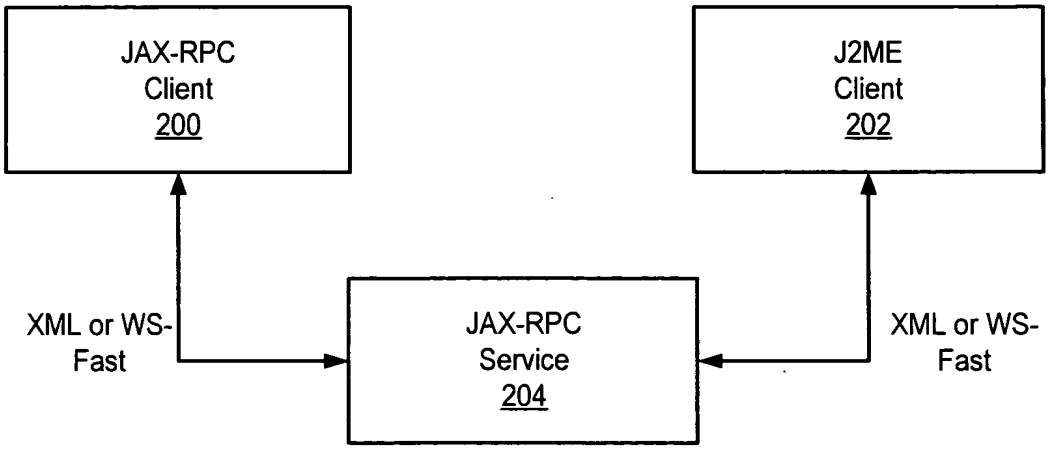
JAX-RPC
Client
200
J2ME
Client
202
XML or WS-
Fast
JAX-RPC
Service
204
XML or WS-
Fast

Fig. 3

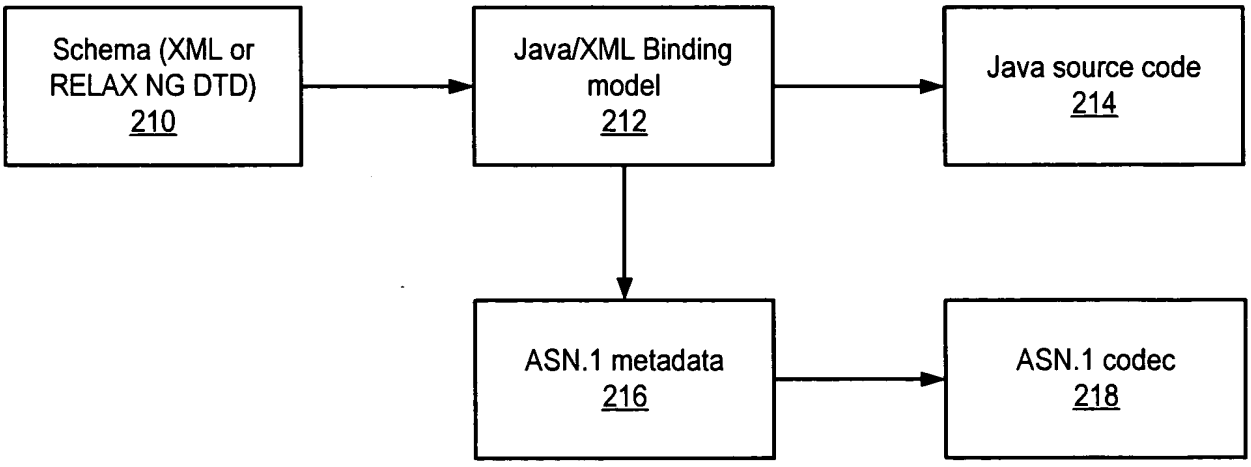
Schema (XML or
RELAX NG DTD)
210
Java/XML Binding
model
212
Java source code
214
ASN.1 metadata
216
ASN.1 codec
218

Fig. 4

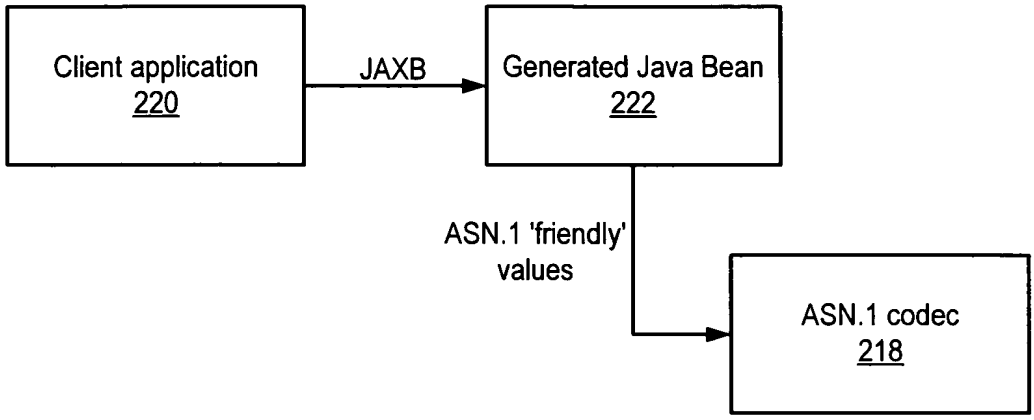
Client application
220
JAXB
Generated Java Bean
222
ASN.1 'friendly'
values
ASN.1 codec
218

Fig. 5

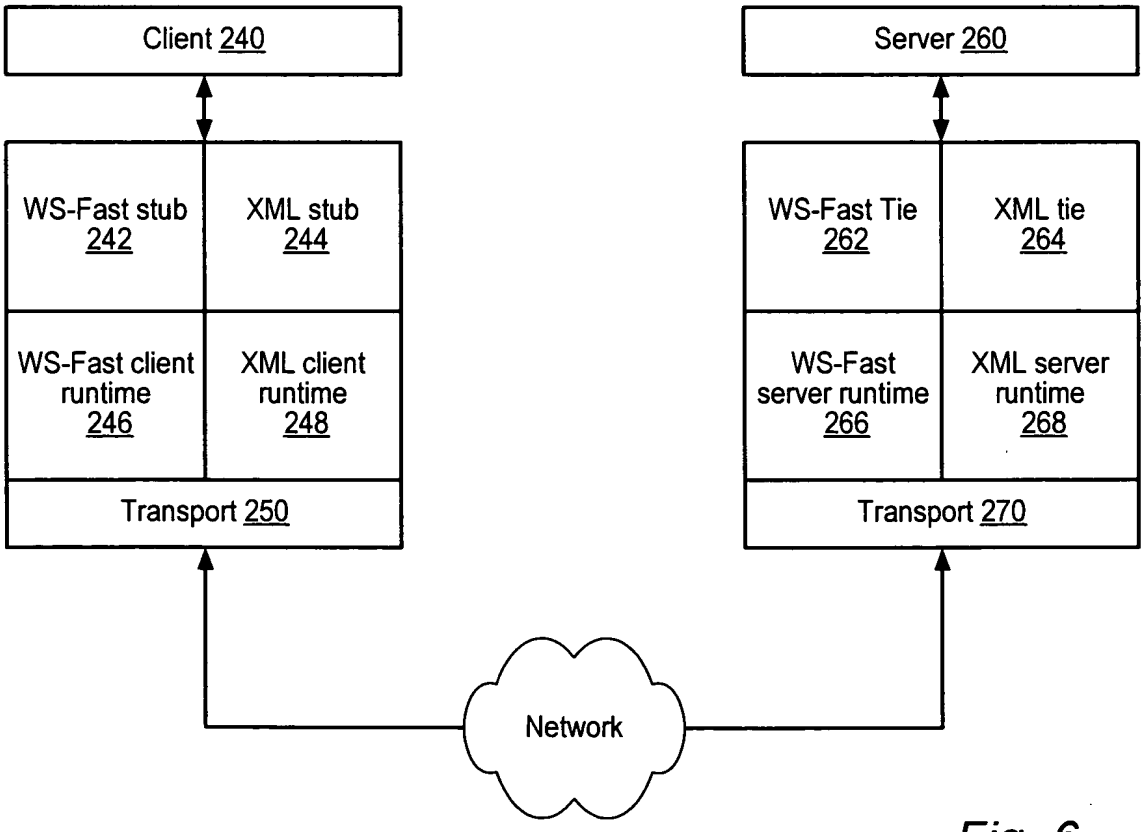
Client 240
WS-Fast stub
242
XML stub
244
WS-Fast client
runtime
246
XML client
runtime
248
Transport 250
Server 260
WS-Fast Tie
262
XML tie
264
WS-Fast
server runtime
266
XML server
runtime
268
Transport 270
Network

Fig. 6

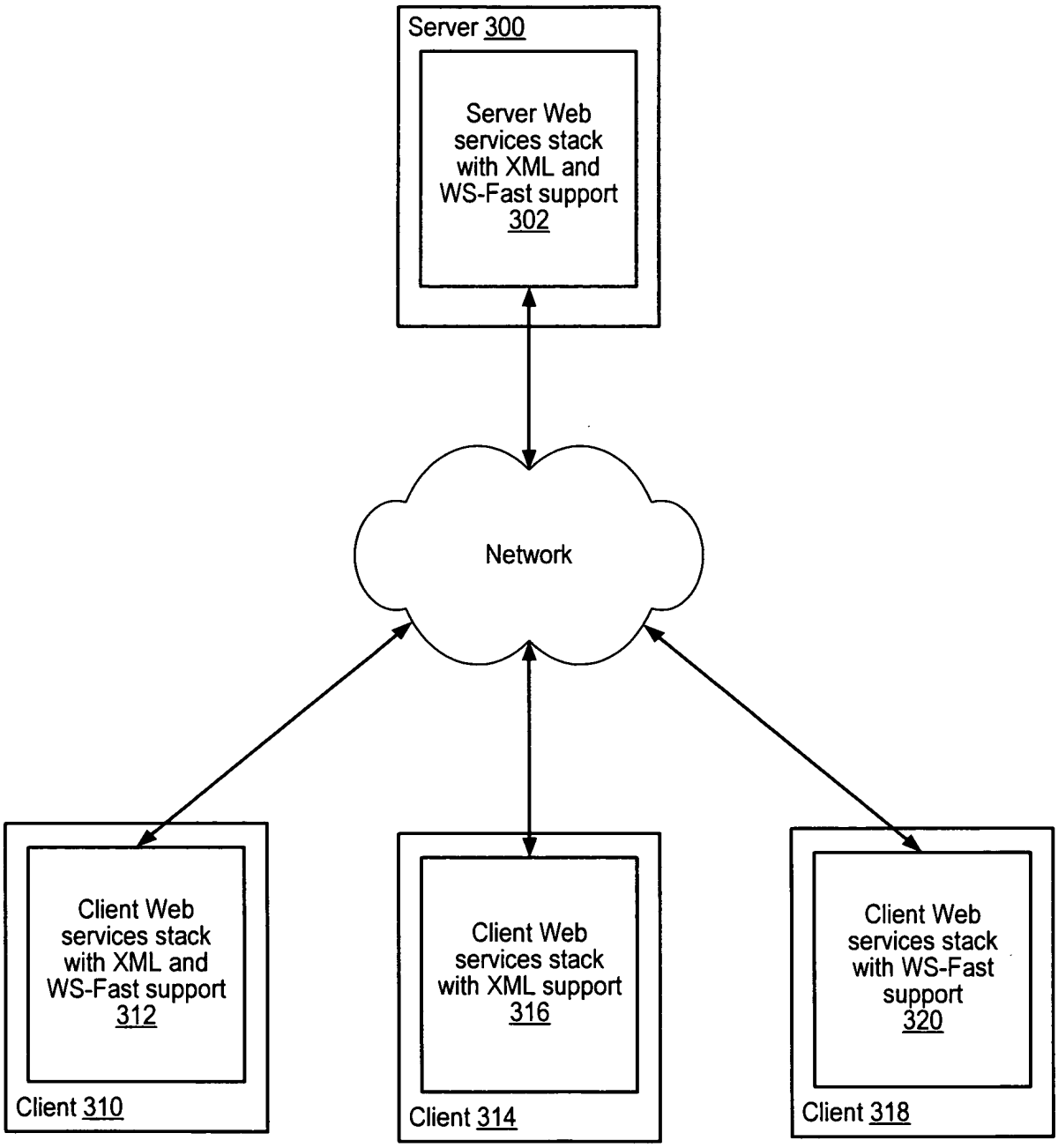
Server 300
Server Web services stack with XML and WS-Fast support 302
Network
Client Web services stack with XML and WS-Fast support 312
Client 310
Client Web services stack with XML support 316
Client 314
Client Web services stack with WS-Fast support 320
Client 318

Fig. 7

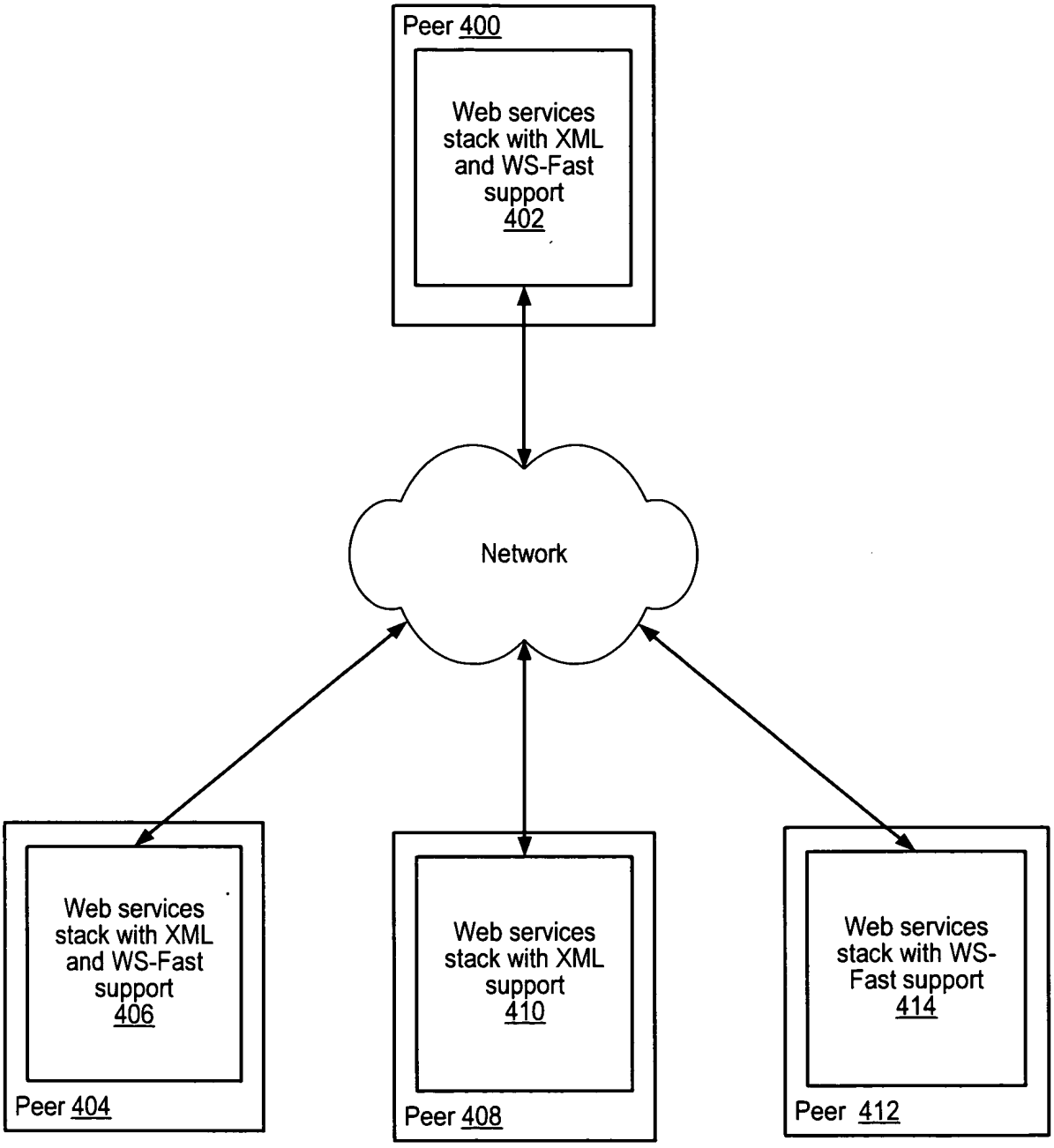
Peer 400
Web services stack with XML and WS-Fast support 402
Network
Web services stack with XML and WS-Fast support 406
Peer 404
Web services stack with XML support 410
Peer 408
Web services stack with WS-Fast support 414
Peer 412

Fig. 8

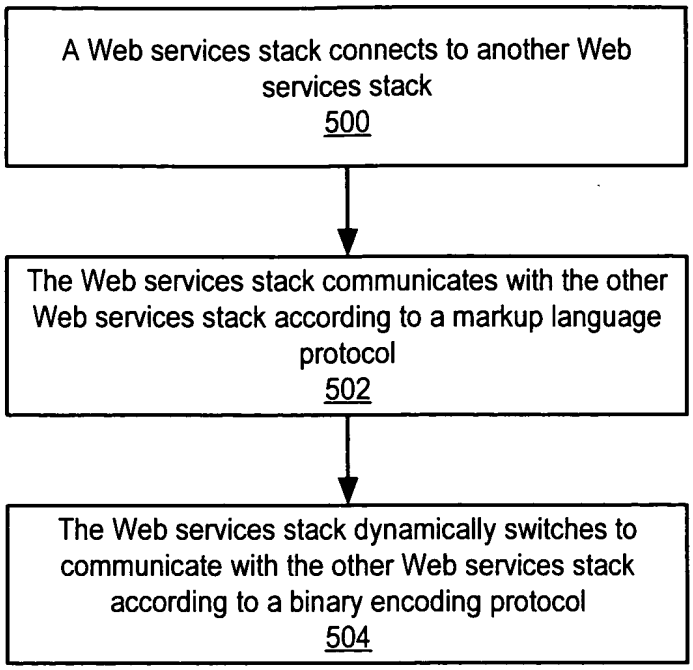
A Web services stack connects to another Web services stack
500
The Web services stack communicates with the other Web services stack according to a markup language protocol
502
The Web services stack dynamically switches to communicate with the other Web services stack according to a binary encoding protocol
504

Fig. 9

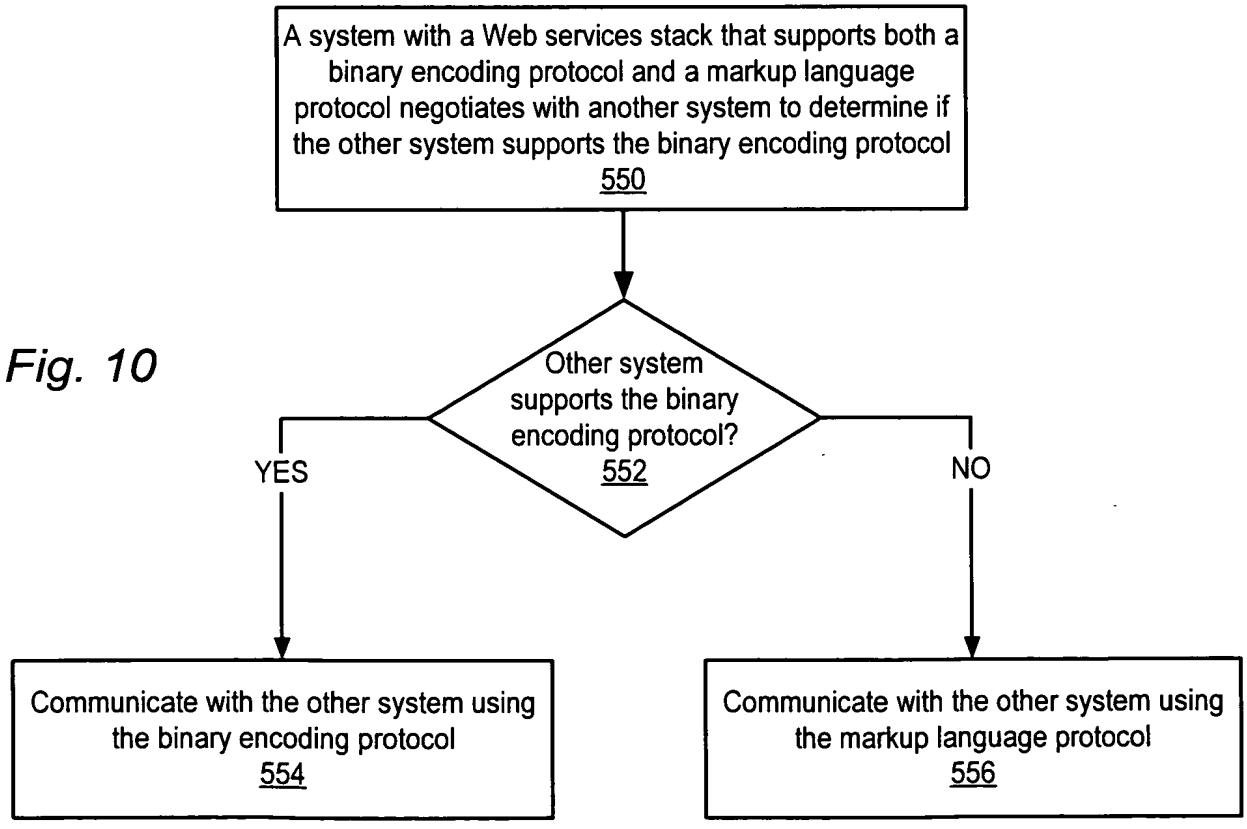
A system with a Web services stack that supports both a binary encoding protocol and a markup language protocol negotiates with another system to determine if the other system supports the binary encoding protocol
550
Other system supports the binary encoding protocol?
552
YES
NO
Communicate with the other system using the binary encoding protocol
554
Communicate with the other system using the markup language protocol
556

Fig. 10

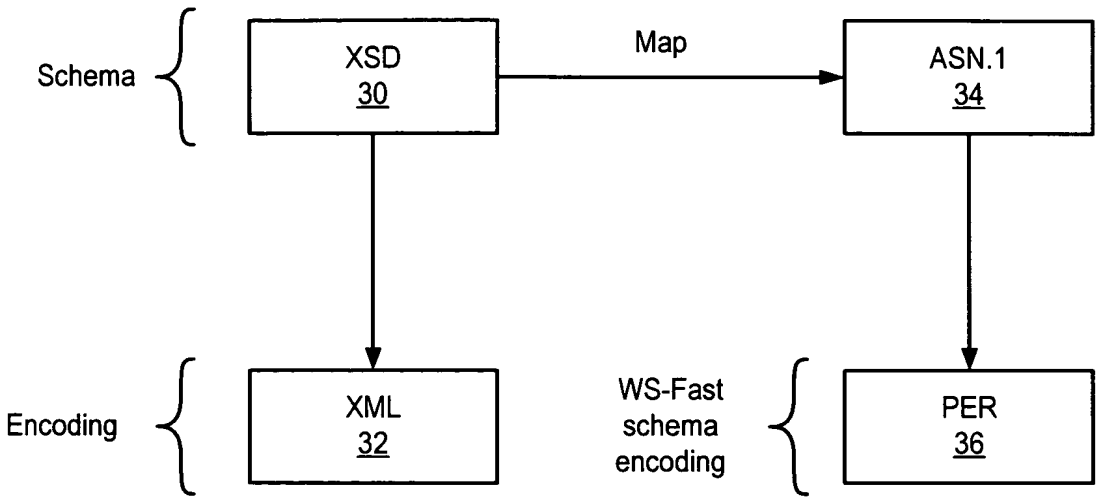
Schema
XSD
30
Map
ASN.1
34
Encoding
XML
32
WS-Fast
schema
encoding
PER
36

Fig. 11

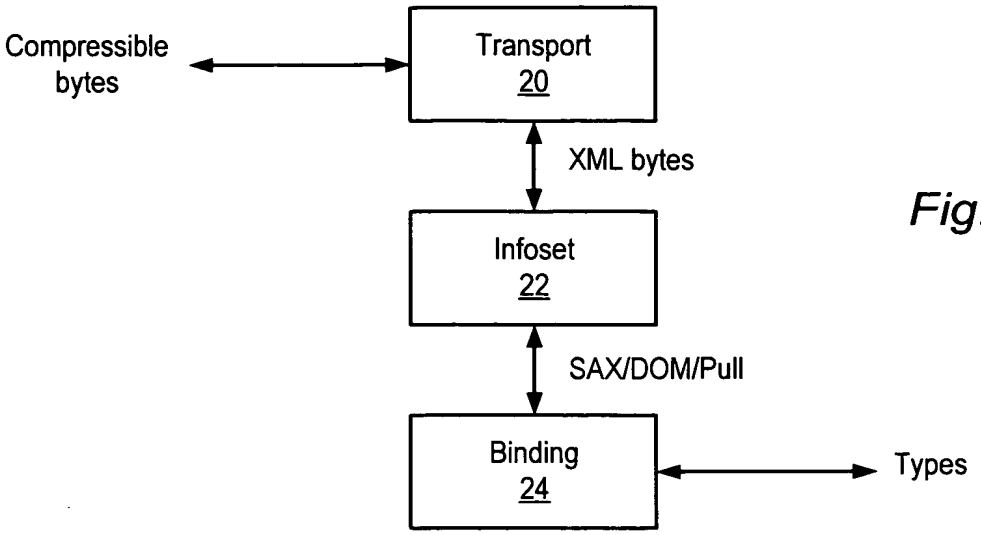

Fig. 12A

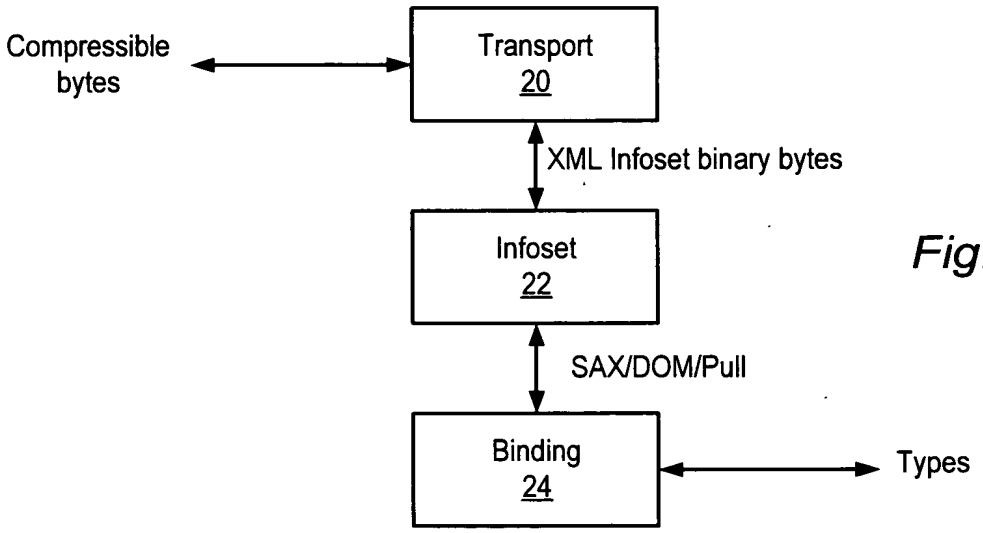

Fig. 12B

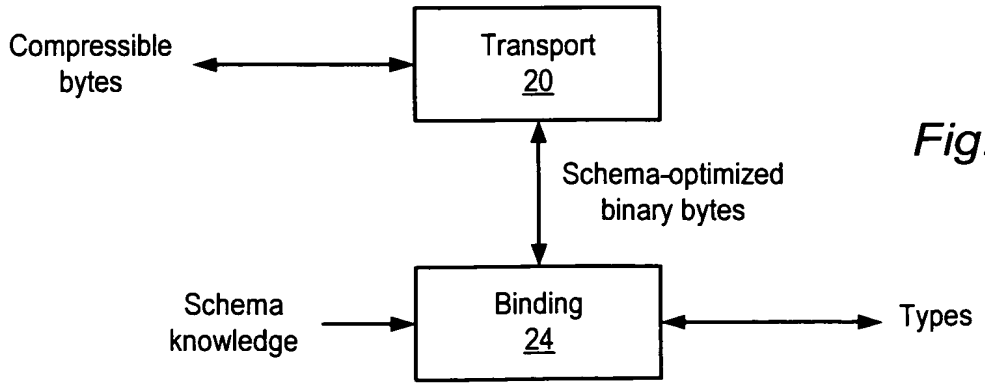

Fig. 12C

XML		Fast Schema	
25B	`<stringT>string</stringT>`	7B	`string`
29B	`<integerT>12345678</integerT>`	4B	`12345678`
25B	`<booleanT>true</booleanT>`	1b	`true`

Fig. 13

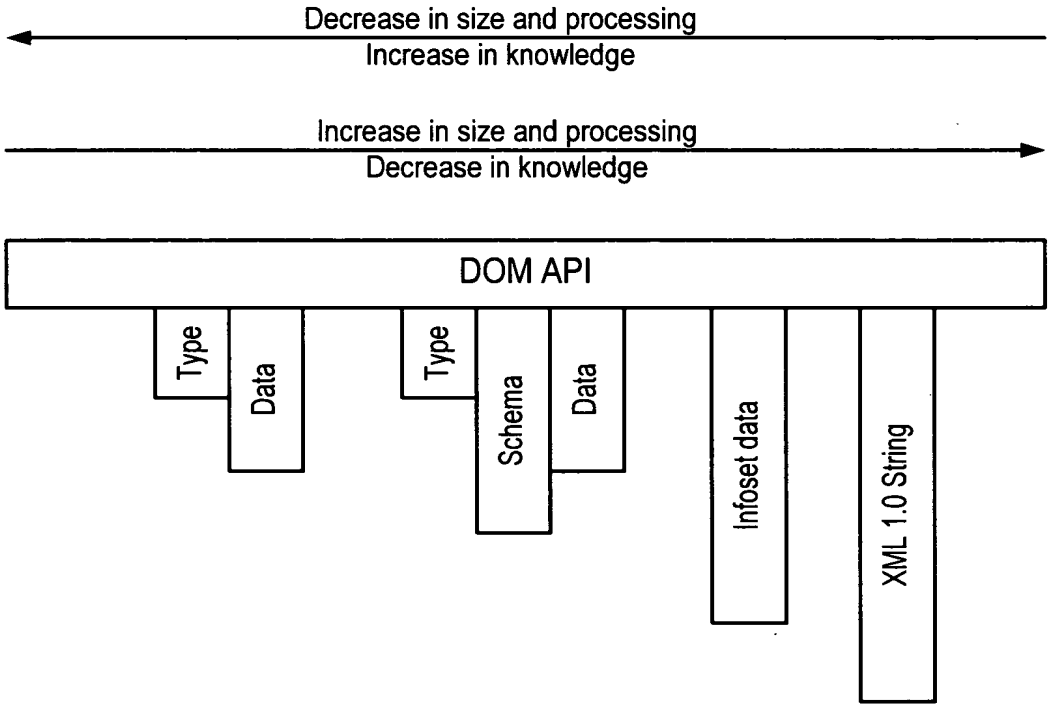

Fig. 14